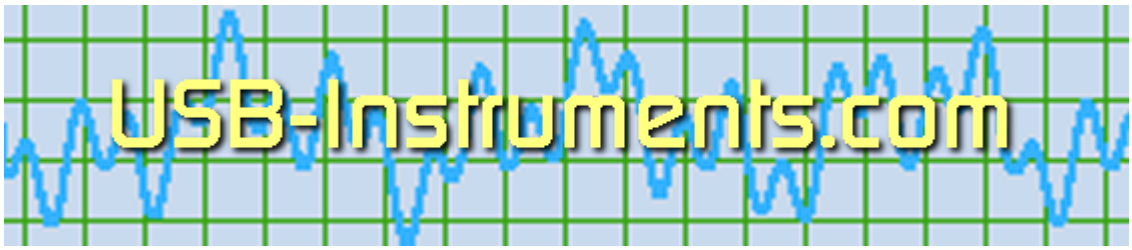

DS2200C User Manual

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EasyScope User Manual

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1 Introduction

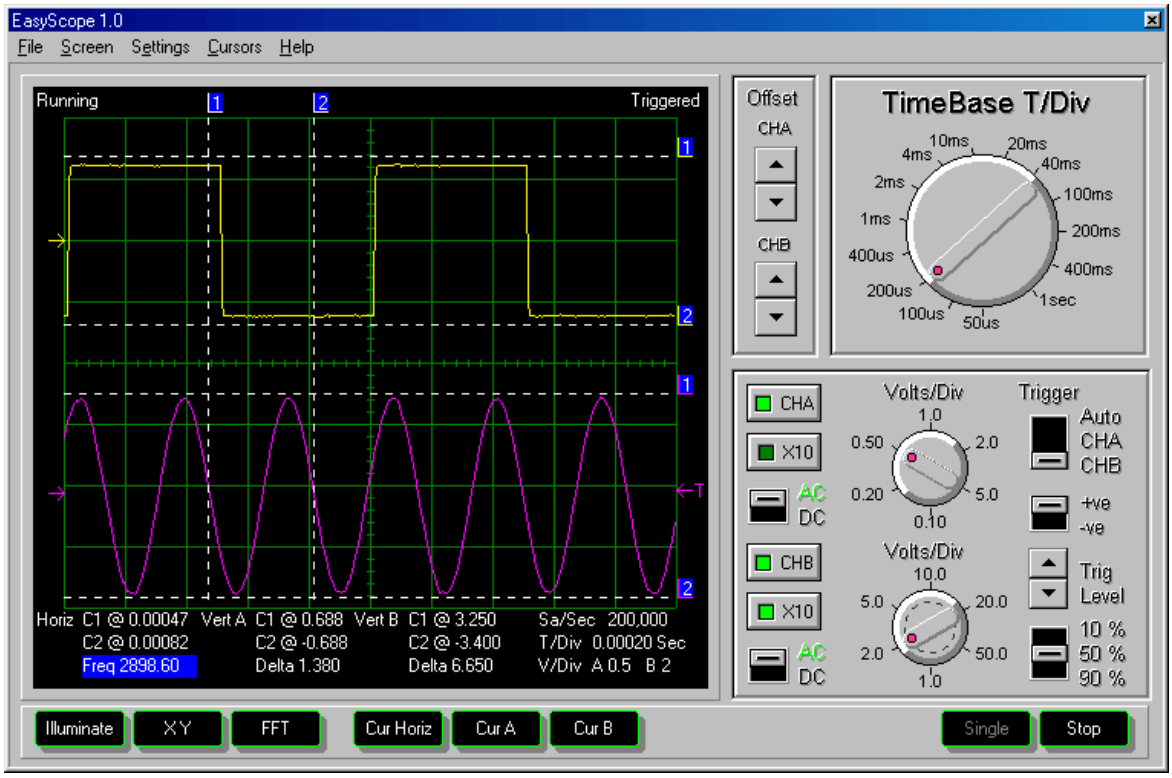
1.1 Welcome to EasyScope

EasyScope is the easy to use but powerful Digital Sampling Oscilloscope application program for the USB Instruments range of PC Oscilloscopes.

It runs on any USB 1.1 or USB 2.0 equipped PC using Windows 98SE, 2000, ME and XP.

1.2 Full Size Screen Image

This is a view of the EasyScope application screen with all the cursors and information displays enabled. For a detailed explanation of how to use the controls, buttons and menus visit the Using EasyScope section.


EasyScope 1.0
File Screen Settings Cursors Help
Running
Triggered
Horiz C1 @ 0.00047 Vert A C1 @ 0.688 Vert B C1 @ 3.250 Sa/Sec 200,000
C2 @ 0.00082 C2 @ -0.688 C2 @ -3.400 T/Div 0.00020 Sec
Freq 2898.60 Delta 1.380 Delta 6.650 V/Div A 0.5 B 2
Offset
CHA
CHB
TimeBase T/Div
10ms 20ms 4ms 40ms 2ms 100ms 1ms 200ms 400us 400ms 200us 1sec 100us 50us
CHA
X10
AC DC
CHB
X10
AC DC
Volts/Div
1.0 0.50 2.0 0.20 5.0 0.10
Volts/Div
10.0 5.0 20.0 2.0 50.0 1.0
Trigger
Auto CHA CHB
+ve -ve
Trig Level
10 % 50 % 90 %
Illuminate XY FFT Cur Horiz Cur A Cur B Single Stop

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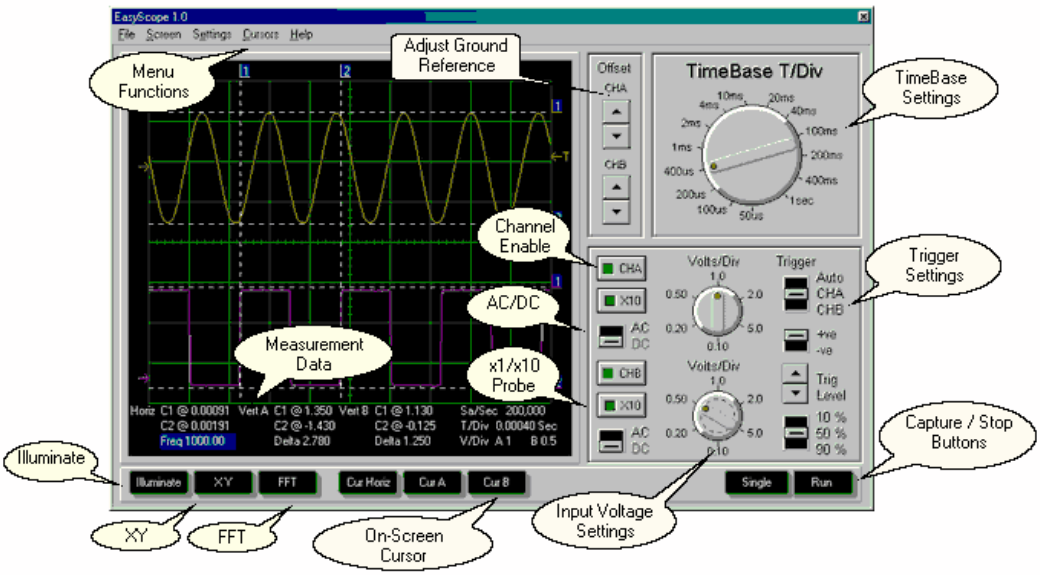
1.3 Screen Function Overview

The EasyScope screen is split into several functional areas as shown in the picture below. The sections that follow illustrate how to use the settings to control the functions of the instrument.



1.4 EasyScope Specification

EASYSCOPE FEATURES

- Attractive, easy to use visual display
- Single and Dual Channel Display modes.
- Sweep and XY display modes
- F.F.T. (Fast Fourier Transform) display
- TimeBase from 50uS/Div to 1.0 sec/div
- Input Ranges from 0.1v / div to 5v / div
- O.S.D. Markers for voltage measurement (2 sets)
- O.S.D. Markers for time / frequency measurement
- Save Oscilloscope Screens to Windows BMP files
- Screen Printout Facility
- AC / DC coupling support
- Support for x1 / x10 probes
- User-Defined Oscilloscope Display Colour Themes

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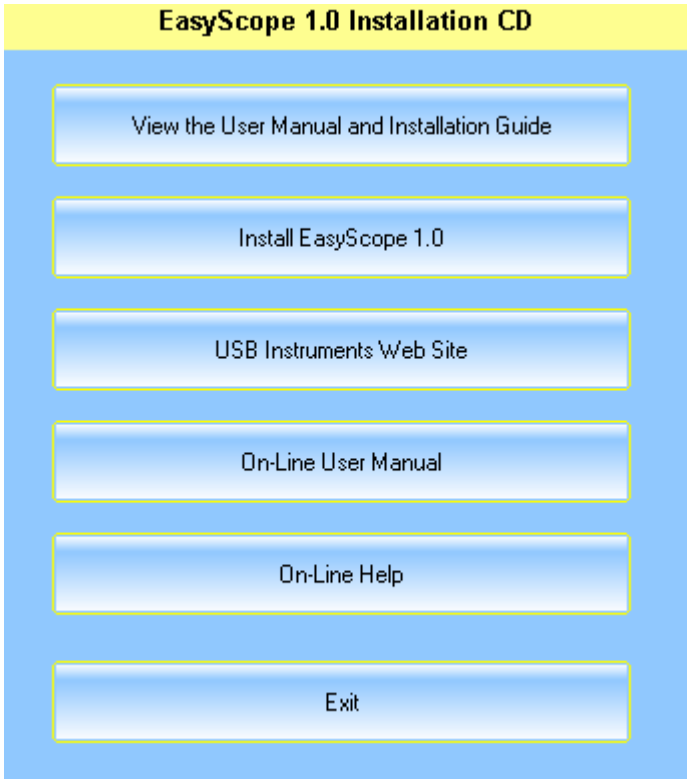
2 Installing EasyScope

2.1 Installing the Software

Before connecting the instrument to the PC, insert the supplied installation disk into the CD ROM drive of your PC. The following menu will appear after a few seconds. Click on the "Install EasyScope 1.0" button to launch the EasyScope installation program.



Click on the "Install EasyScope 1.0" button to launch the EasyScope installation program. The following screen will appear ..

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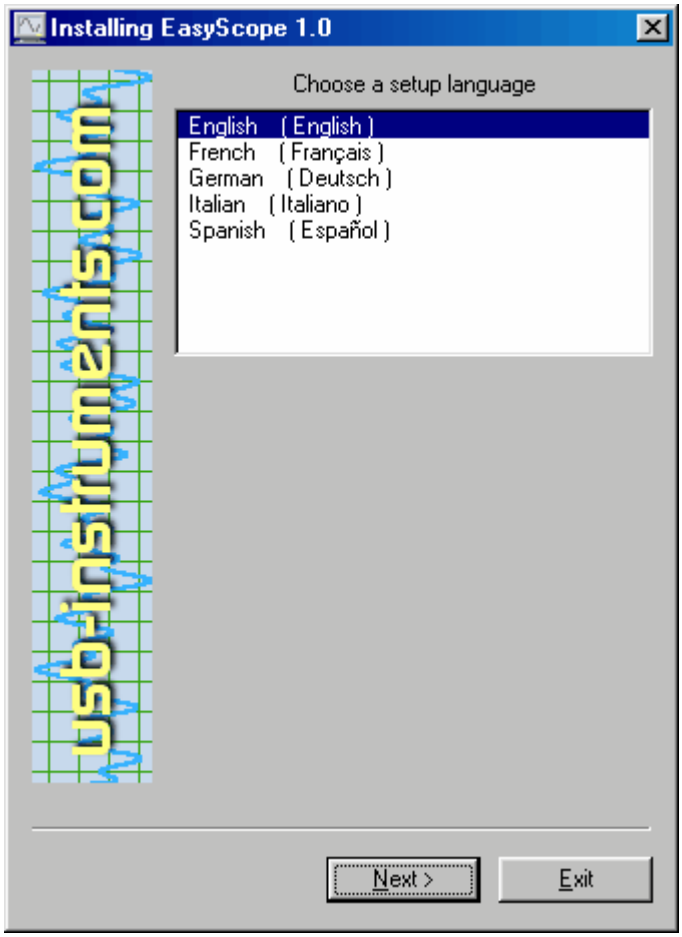
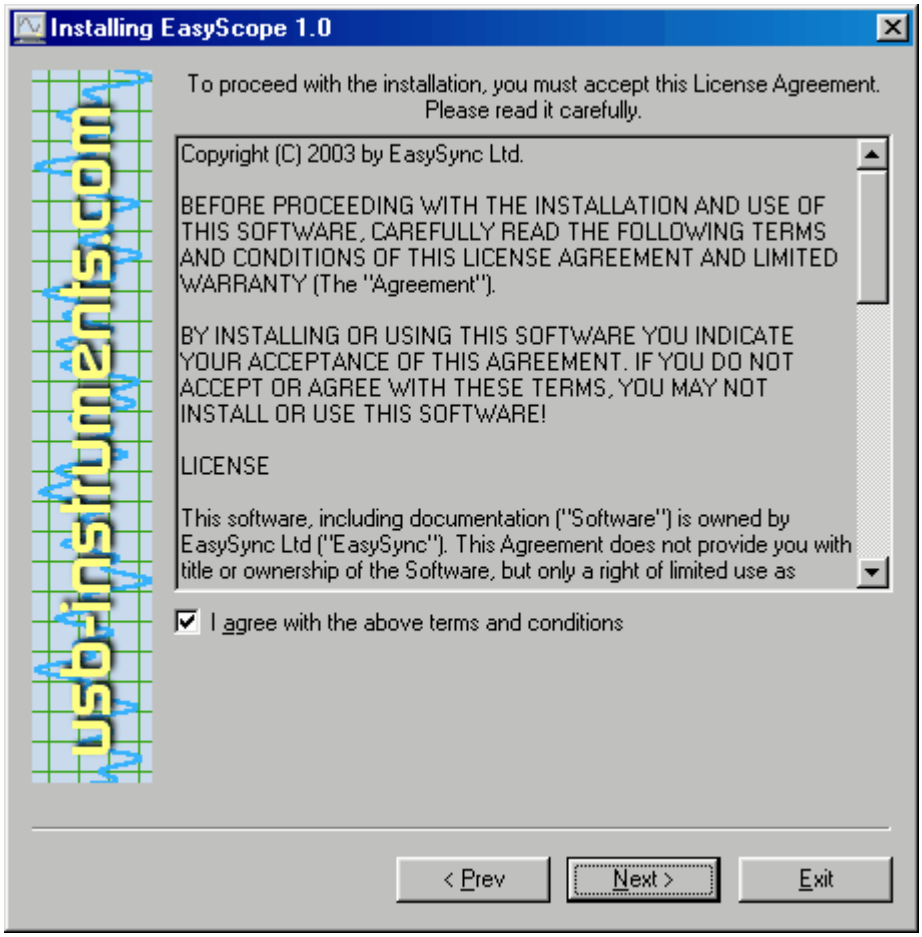


Choose the language you would like the setup program to use. In this example we will select English. Click on the "Next" button to bring up the License Agreement Screen.


Installing EasyScope 1.0
To proceed with the installation, you must accept this License Agreement.
Please read it carefully.
Copyright (C) 2003 by EasySync Ltd.
BEFORE PROCEEDING WITH THE INSTALLATION AND USE OF THIS SOFTWARE, CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT AND LIMITED WARRANTY (The "Agreement").
BY INSTALLING OR USING THIS SOFTWARE YOU INDICATE YOUR ACCEPTANCE OF THIS AGREEMENT. IF YOU DO NOT ACCEPT OR AGREE WITH THESE TERMS, YOU MAY NOT INSTALL OR USE THIS SOFTWARE!
LICENSE
This software, including documentation ("Software") is owned by EasySync Ltd ("EasySync"). This Agreement does not provide you with title or ownership of the Software, but only a right of limited use as
I agree with the above terms and conditions
< Prev
Next >
Exit

If you agree with the terms and condiions of the License Agreement, check the "I agree" box and click on the "Next" button to continue the installation process else click on the "Exit" button. The "Next" button is disabled if you do not agree to the terms and conditions. Agreeing to the terms and clicking on the "Next" button brings up the following screen.

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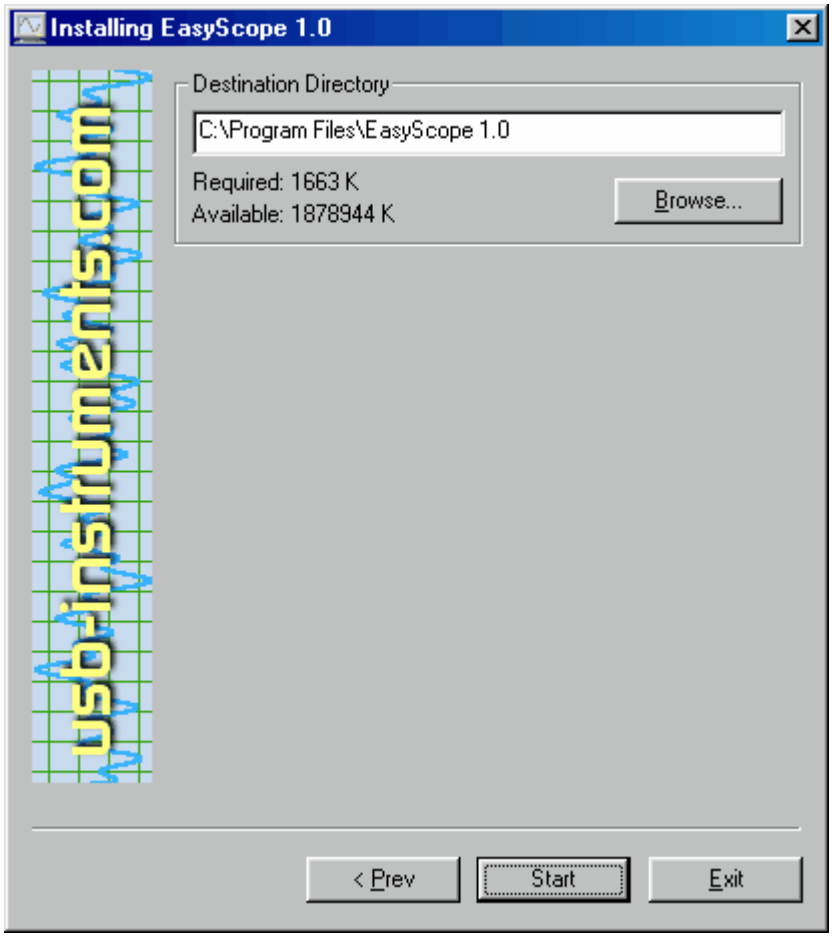
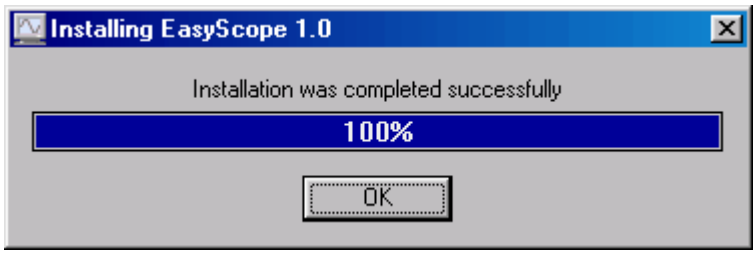


Select the directory you wish to install the EasyScope software into. A default directory is shown on the screen. Unless you have good reason to change it we suggest you use the default suggested by the installation program. Click on the "Start" button to commence copying the files to the EasyScope program directory.



A progress screen (above) will appear as the files are installed. After a few seconds you should see the Installation completed successfully message. Click on the "OK" button to complete the final stage of the installation process.

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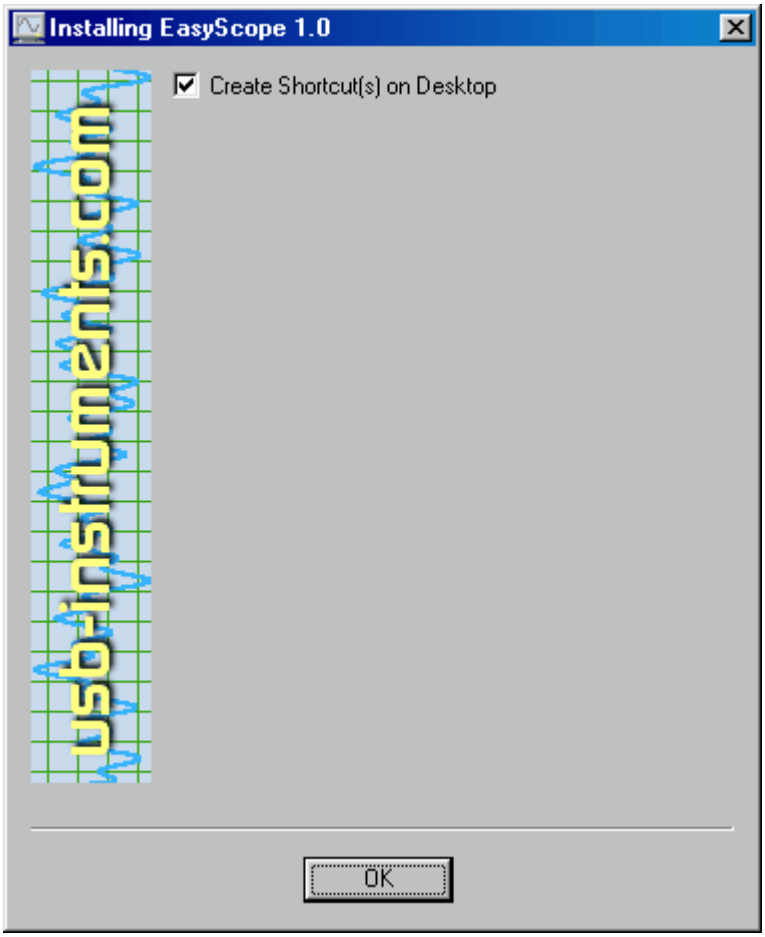
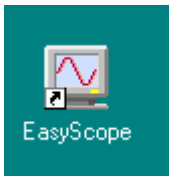


Finally, select if you wish to place a shortcut icon on the Windows desktop to the EasyScope program and click on "OK". The installation process is now complete. If you have selected this option, you can launch the EasyScope program from the desktop by double-clicking on the EasyScope icon (pictured below).



You can also launch the EasyScope program from the Start -> Programs -> EasyScope menu on the Windows Toolbar.

As shown above, you also have access to the EasyScope Help File and Program Uninstaller from there.

Before using EasyScope the USB drivers need to be installed. This is done by plugging in the

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instrument into a spare USB Port on the PC. The instrument should be plugged into a USB hub port of your PC or alternatively, a self-powered USB hub (one that has it's own power supply). If the instrument consumes under 100mA (check the specification), you may also plug it into a bus-powered USB Hub if desired.

If this is the first time that the instrument has been plugged-in, Windows will then request the USB drivers for your product. See Installing the USB Drivers [10] for further details.

2.2 Installing the USB Drivers

Before using EasyScope the USB drivers need to be installed. This is done by plugging in the instrument into a spare USB Port on the PC. The instrument should be plugged into a USB hub port of your PC or alternatively, a self-powered USB hub (one that has it's own power supply). If the instrument consumes under 100mA (check the specification), you may also plug it into a bus-powered USB Hub if desired.

If this is the first time that the instrument has been plugged-in, Windows will then request the USB drivers for your product, Windows will request the USB drivers for your product and will display a Add New Hardware Wizard dialog box. The examples below are for Windows '98 but the procedure is very similar for other Windows versions.

Add New Hardware Wizard
This wizard searches for new drivers for:
DS2200E
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

Click on "Next" to bring up the following dialog box ...

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Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

Click on "Next" to bring up the following dialog box ...

Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
C:\Program Files\Borland\Delphi5\Projects\ds22
Browse...
< Back
Next >
Cancel

Check "CD-ROM drive" and un-check any other options.

NOTE: If the CD is not available and the EasyScope software has already been installed, then check the "Specify a location" box and use the Browse button to select the "drivers" sub-directory of the EasyScope Program Files directory instead.

Keep Clicking on "Next" until the installation is finished as per the screen below.

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Click "Finish" and the driverinstallion is now complete.

3 Using EasyScope

3.1 The Run / Stop and Single Capture Buttons

On starting EasyScope, the program is in idle mode and displays two buttons on the bottom toolbar with the captions "Single" and "Run" In order to display a trace on the Oscilloscope you need to click on either of the "Run" or "Single" buttons.

The "Run" button is used to continuously capture and display data while the "Single" button captures one screen's worth of data then returns the program to idle mode. On clicking the "Run" or "Single" buttons captured data will be displayed on the screen providingthat -

- One or Both of the channels are enabled AND Triggeringis in auto mode (= no triggering)

AND / OR

AND

OR

- Triggeringis enabled on one of the channels AND the trigger level of the selected channel is within

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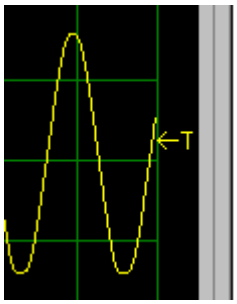
the voltage range of the input signal.

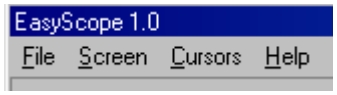
AND



When the "Run" button is clicked, the capture / display begins and the caption of the button changes to "Stop". The "Single" button is "greyed-out" as the two functions are mutually exclusive. To stop the capture, click on the "Stop" button and the oscilloscope will change back into idle mode.

The last captured data will remain displayed on the screen as long as the user does not change any of the oscilloscope settings. If desired the screen display can be saved to a Windows Bitmap (.bmp) format file or can be printed by any printer connected to the P.C. These subjects are dealt with in later topics.

An alternative to the Run / Stop button is provided through the File Menu at the top of the application screen.



Click on "File" to select the drop down menu (below)

Click on "Run" or "Stop" as desired.

3.2 TimeBase Settings

The timebase settings are adjusted by clicking on the rotary switch in the Timebase Panel. There are 14 possible settings ranging from 50us per division (fastest) to 1sec / division (lowest) Please note, at the lower speed settings there will be a noticeable delay between clicking on the "Run" button and the trace appearing on the oscilloscope screen. This is because the sampling (conversion) rate is low and it takes more time to capture a buffer's worth of data.

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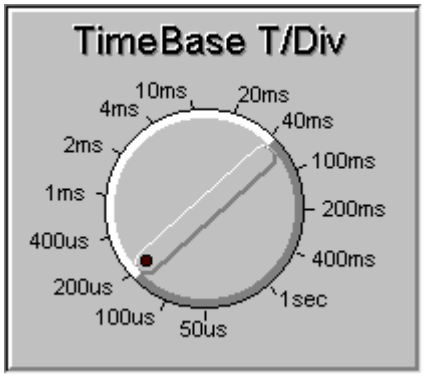
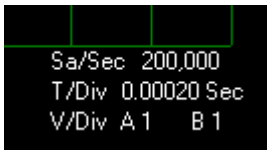
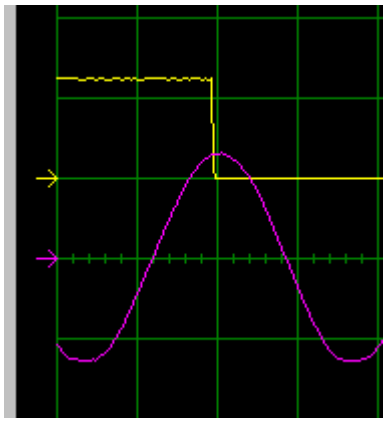


The timebase setting can change the sampling rate of the oscilloscope. The sampling rate is displayed on the bottom right of the oscilloscope panel - see below.



3.3 Offset Settings (Ground Reference)

The ground (0v) reference for each channel is shown by a small arrow on the left hand side of the screen. The colour of the arrow is the same as the colour of the trace for that channel.



To adjust the ground reference setting, click on the Up/Down buttons in the Offset Panel. There are one set of buttons for each channel - see below. The offset can be changed both in idle mode and in run mode.

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3.4 Selecting the Channel

The oscilloscope has two channels named CHA and CHB. These can be turned on and off by clicking on the two LED switches on the main panel. When a channel is enabled, the LEDs will be lit, otherwise they will be dimmed. One or both channels must be enabled to view the oscilloscope trace.

In the example below, CHA is enabled and CHB is turned off.

3.5 Adjusting the Input Gain

The input gain is adjusted by clicking on the Volts/Div rotary switch on the main panel (below). Two switches are provided, the upper one sets the gain for CHA while the lower one sets the gain for CHB.

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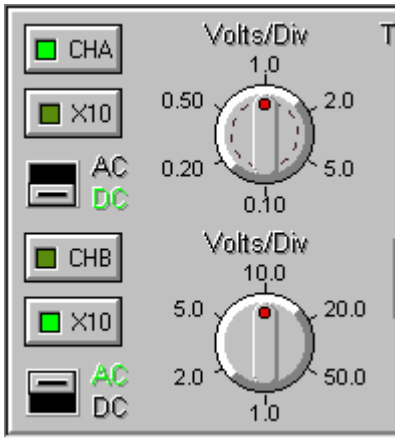

There are 5 settings to choose from on each rotary switch. In addition, the settings depends on if the oscilloscope probe used is a x1 (1M ohm input impedance) or a x10 (10M ohm input impedance). If a x10 oscilloscope probe is used then enable the X10 setting for that channel by clicking on it's X10 button. This will re-scale the switch and display cursor settings by a factor of 10. In this example, CHA is using a x1 oscilloscope probe, while CHB is using a x10 oscilloscope probe.

3.6 AC/DC Coupling

AC/DC coupling is controlled by miniature relays inside the oscilloscope. To select AC or DC coupling click on the AC/DC selector switch for each channel. This will instruct the oscilloscope to change the coupling from AC to DC or vice-versa. The current selection is highlighted in green to the right of the switch.

In this example, CHA is set to DC coupling while CHB is set to AC coupling.

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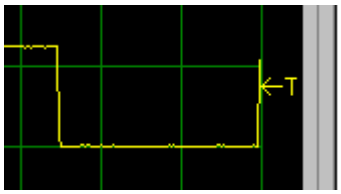
3.7 Using the Trigger Functions

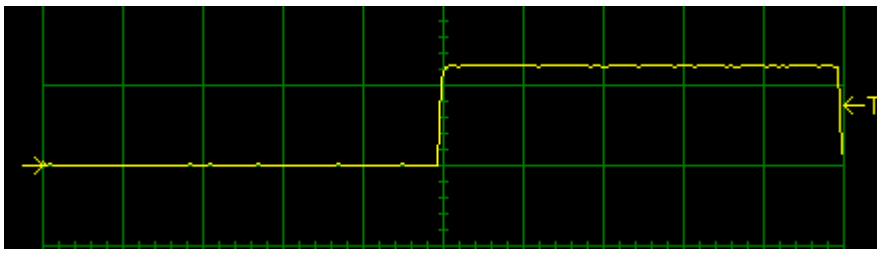
Trigger functions are controlled by the controls on the right hand side of the main panel.

To use triggering first of all select which channel (CHA or CHB) you wish to trigger from. If you do not use to use triggering select Auto instead and the oscilloscope trace will free-run.
Next, select which edge of the signal you wish to trigger from - +ve selects a rising edge while -ve selects a falling edge.
Use the Trig Level Up/Down button to set the desired trigger level voltage. The trigger level is shown as an arrow with a "T" to the right of the oscilloscope screen.



Finally, use the 10% / 50% / 90% switch to select the position of the triggerred event on the screen. In the following examples, we select to trigger from CHA on a rising edge.

Example 1 - Trigger position set to 50%. In this example the trigger point (the rising edge of the waveform) is set to the centre of the oscilloscope screen display.



Example 2 - Trigger position set to 10%. In this case, the trigger is displayed towards the left side of the oscilloscope screen display.

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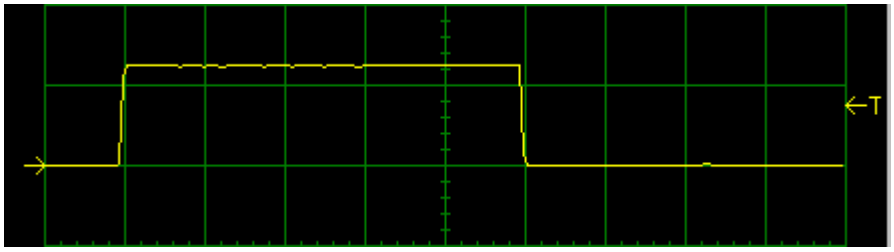
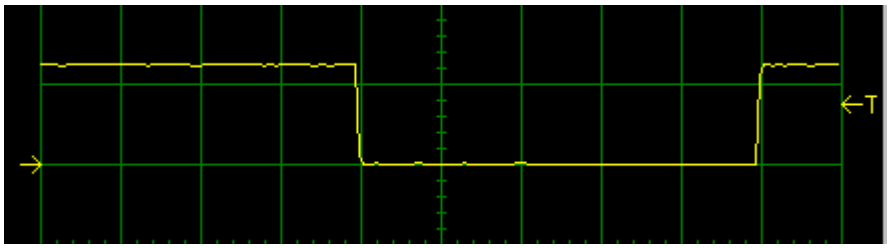


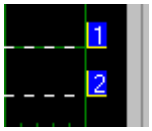
Example 3 - Trigger position set to 90%. In this case, the trigger is displayed towards the right side of the oscilloscope screen display.



3.8 Voltage Measurement

EasyScope supports two pairs of cursors (one for each channel) for measuring amplitude. These are enabled / disabled by two buttons on the bottom panel.

When a cursor is enabled a pair of measurement cursors (dashed horizontal lines) appear on the screen. To the right of the cursors are marker blocks 1 and 2. To move a cursor, place the mouse pointer over the marker block you wish to move, and holding down the left mouse button drag the cursor to the point you wish to measure.



When a cursor is enabled, the measurement information for that cursor is displayed in an information block at the bottom of the trace display as shown below.

C1 and C2 are the Cursor 1 and Cursor 2 values relative to the Ground Setting (offset) for that channel. The difference in amplitude (C1 minus C2) is shown by the Delta value. The following example shows the cursors being used to measure the peak to peak amplitude of a signal- in this

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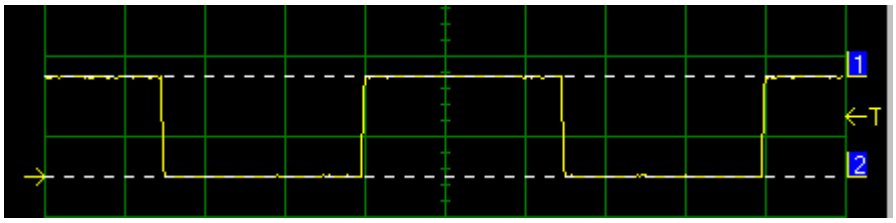
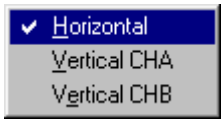
case the 1KHz 1.25v square wave reference output of a DS2200 oscilloscope.



The measurement cursors are placed, one on the top the other on the bottom of the waveform.

As can be seen from the information display, Cursor 1 is sitting at 1.25v and Cursor 2 is sitting at 0v relative to the Channel GND. The peak to peak amplitude is shown by the Delta value, in this case 1.25 volts.

An alternative to using the lower panel buttons is to click on the "Cursors" setting in the top menu and click on the item you wish to enable or disable.

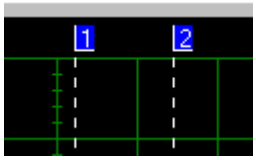


3.9 Time / Frequency Measurement

EasyScope supports a pair of (horizontal measurement) cursors for measuring time / frequency. Note : Frequency can also be measured in a different way using the FFT display.

To enable the time measurement cursors click on the Cur Horiz button.

When a cursor is enabled a pair of measurement cursors (dashed vertical lines) appear on the screen. At the top of the cursors are marker blocks 1 and 2. To move a cursor, place the mouse pointer over the marker block you wish to move, and holding down the left mouse button drag the cursor to the point you wish to measure.



A cursor information panel is displayed at the bottom of the oscilloscope screen showing the time value of each cursor and the difference.

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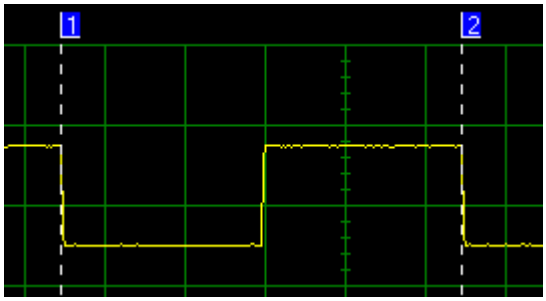
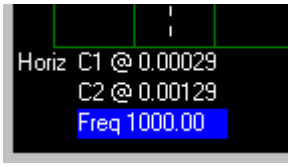
To display the delta as a frequency, click on the highlighted display area.

The cursor information panel will now display the delta as frequency instead of time. In this case the frequency is 2,000 Hz.

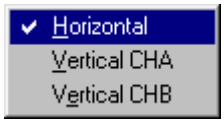
The following example uses the time measurement cursors to measure the frequency of the calibration reference output of a DS2000 oscilloscope. Cursor 1 is placed on the first falling edge of the waveform and Cursor 2 is placed on the next falling edge of the waveform.



Looking at the cursor information panel (in frequency mode), we see that the frequency of the signal is in fact 1,000Hz or 1.0KHz.



An alternative to using the lower panel buttons is to click on the "Cursors" setting in the top menu and click on the item you wish to enable or disable.



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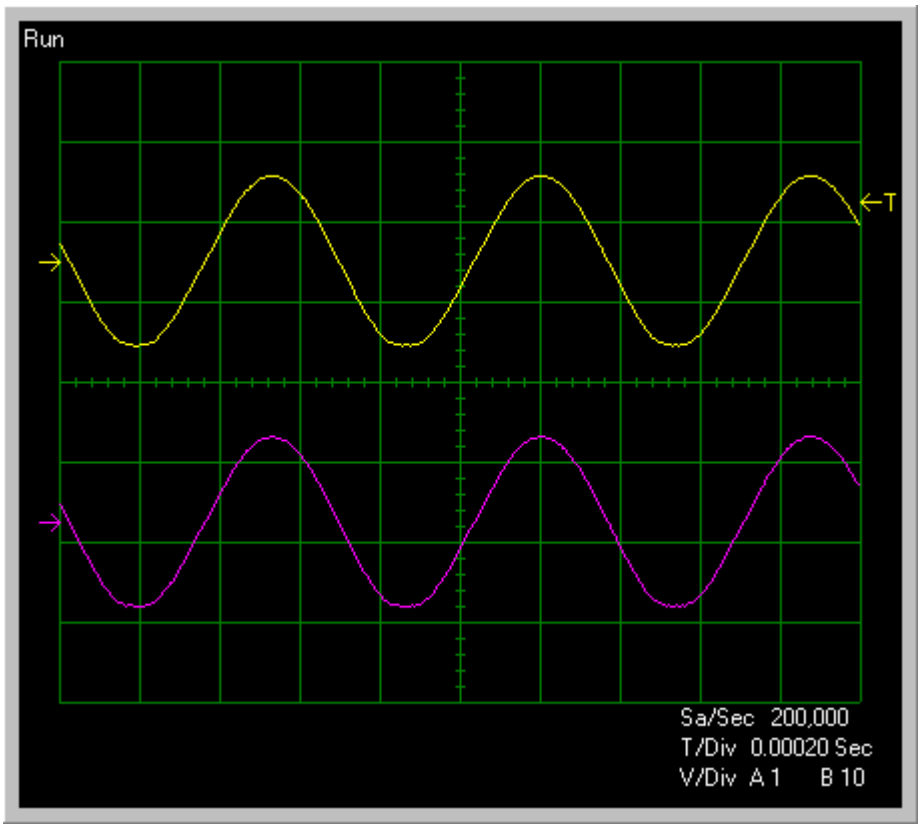
3.10 XY Mode

Easyscope has the capability of displaying in XY mode as well as sweep mode. XY mode is used to compare the frequency and phase between two signals - usually sine waves. This kind of display is sometimes referred to as a Lissajous figure. To change from sweep mode to XY mode, click on the XY button on the bottom panel.

The following example shows two identical sine waves on each channel in sweep mode.



Clicking on the XY button changes the display to XY Mode. The screen now looks like -

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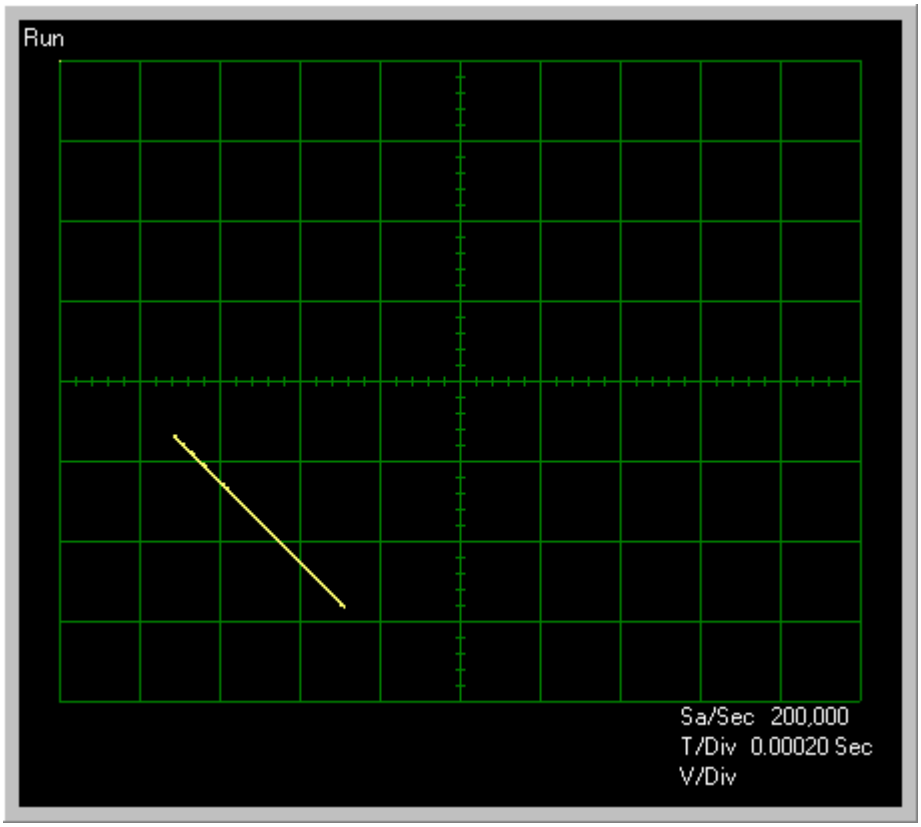

As both the waveformsare identical XY mode just produces a straight line at 45 degrees. More interesting effects can be obtainedwhen the signals are out of phase (an ellipse appears) or when the frequencies are different (an ellipse with a number of twists in it appears).

3.11 Screen Colour Themes

EasyScope supports two differentcolour themes, "Normal" and "Bright". Thetwo themes are toggled by clicking on the Illuminate button on the bottom panel. The colours of each theme can be customised to the user's own preference. See the Changing the Screen appearancesection for details of how to customise the theme colours.

This is the default "Normal" colour theme. The background is black, the grid is green, CHA is shown in yellow and CHB is displayed in fuscia.

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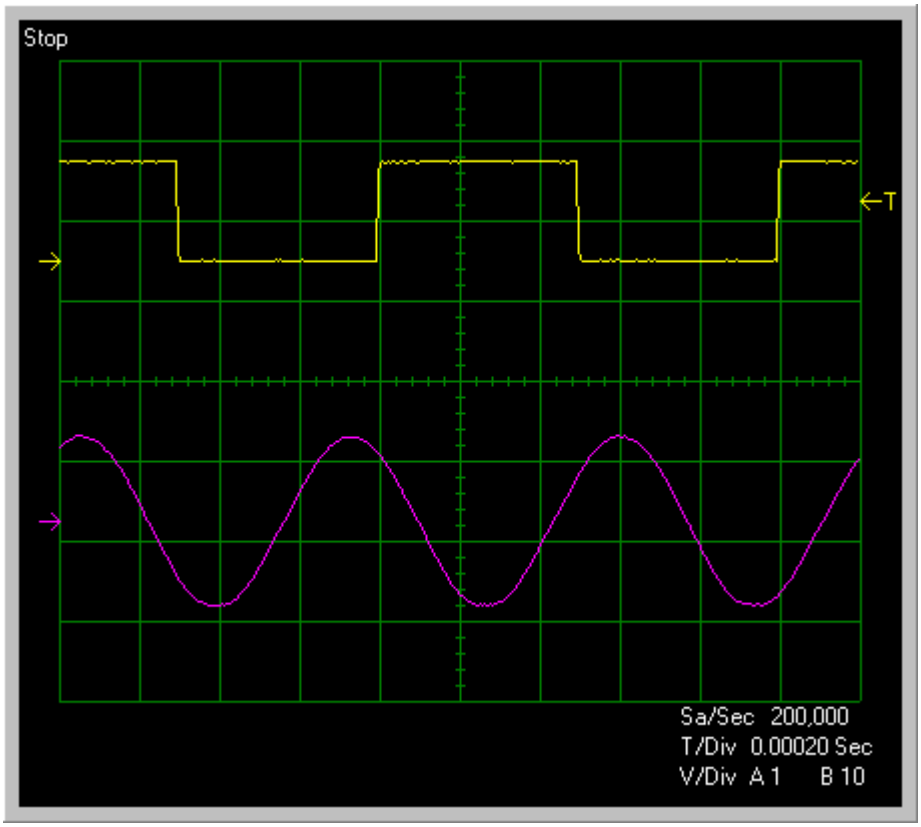

This is the default "Bright" screen. The grid colour changes from green to lime colour giving an effect similar to the illuminate button on a traditional oscilloscope.

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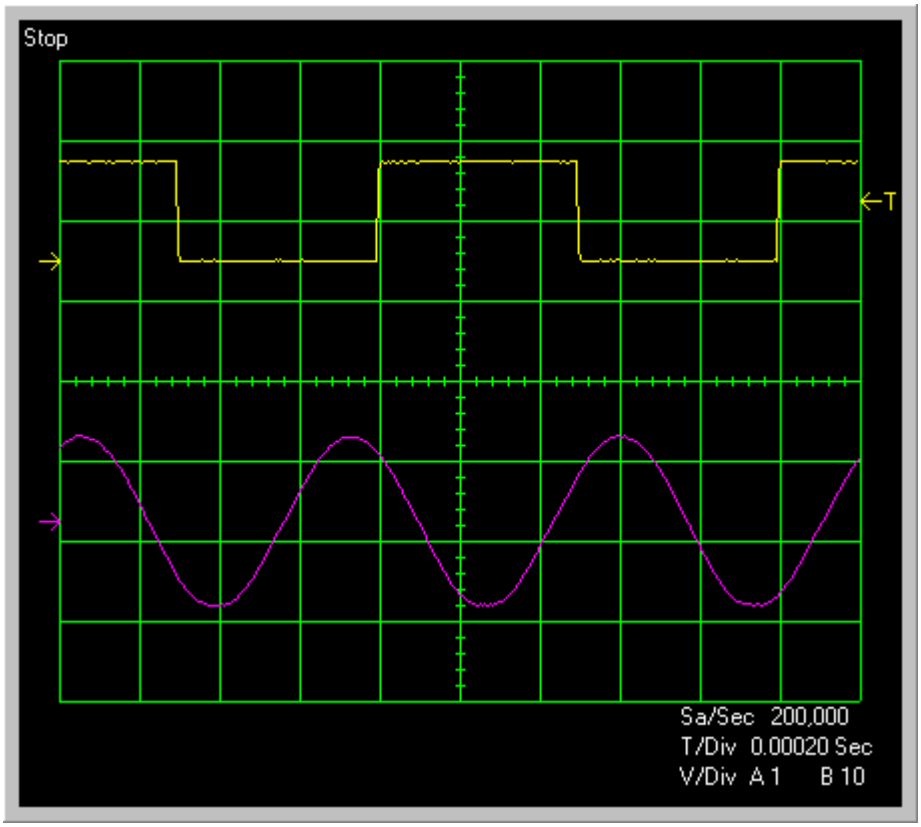
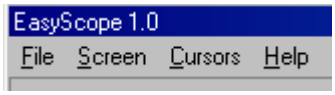


3.12 Quitting the Application

There are two ways to shut down the EasyScope application. The first of these is to click on the small "X" button on the top right of the application screen.

The other way to quit the application is through the File Menu at the top of the application screen.



Click on "File" to select the drop down menu (below)

Click on "Exit" to quit the application.

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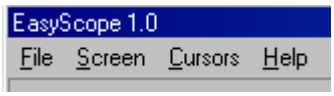
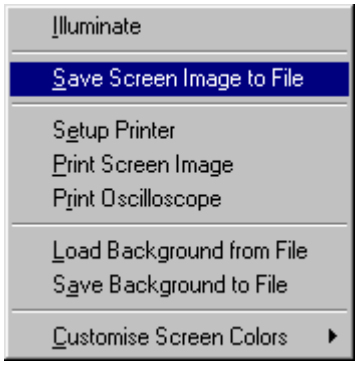
3.13 Saving the Screen Image

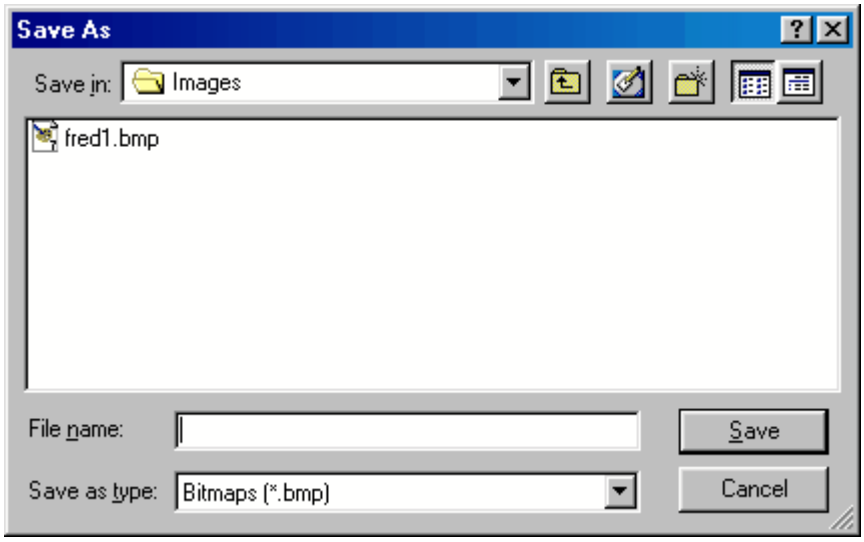
The image of the oscilloscope screen can be saved to a Windows BMP format file. This is done through the File Menu at the top of the application screen.



Click on "Screen" to view the drop down menu (below)



Click on the "Save Screen Image to File" menu selection. This will bring up the "Save As" dialog box. By default, screen images are saved in the Images folder of the main application folder (the folder the EasyScope application was installed into). A different folder can be selected if desired. Either enter a new file name in the box provided or click on an existing file name if you want to overwrite it with the new image.



Click on "Save" to save the screen image to a file or "Cancel" to quit without saving and return to the application.

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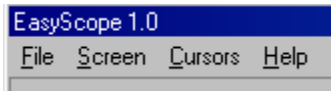
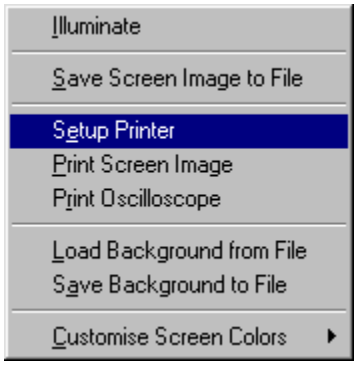
3.14 Printing the Screen Image

The image of the oscilloscope screen can be printed to any installed Windows printer. This is done throughthe File Menu at the top of the application screen.



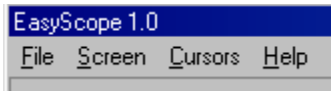
Click on "Screen" to viewthe drop down menu (below)



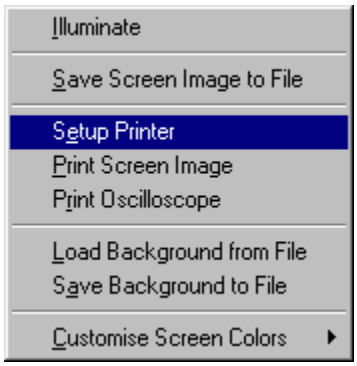
Two choices are available. "Print Screen Image" prints out the Oscilloscope screen display only, while "Print Oscilloscope" prints out the whole application screen including all the panels, controls and menus. Clicking on either of these will spool the selected image to the printer. If you havemore than one printer available, or you wish to change the printer properties (settings) reviewthe Printer Setup 26 topic beforeprinting.

3.14.1 Printer Setup

The image of the oscilloscope screen can be printed to any installed Windows printer. This is done throughthe File Menu at the top of the application screen.



Click on "Screen" to viewthe drop down menu (below)



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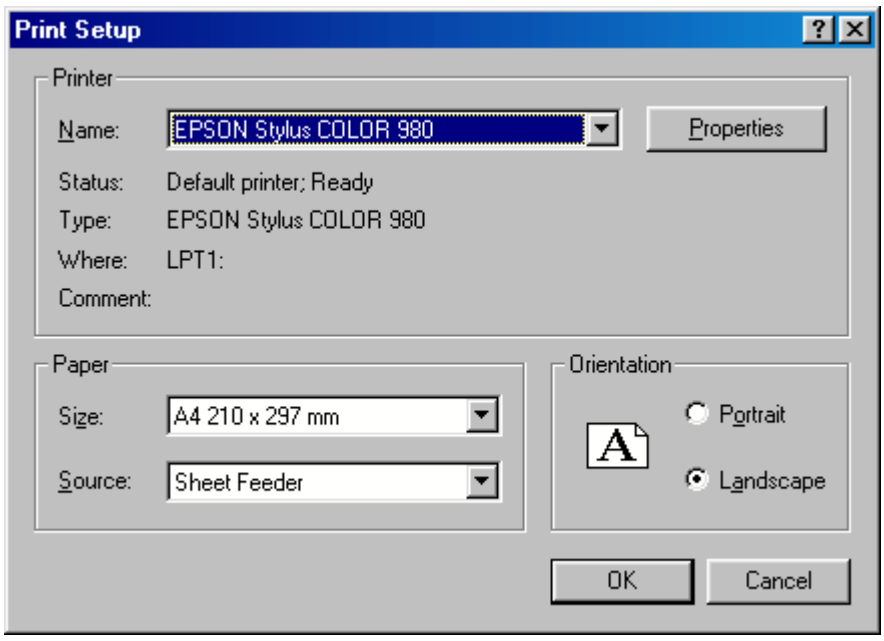
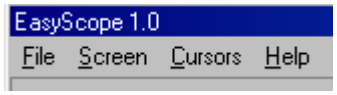
If there is more than one printer attached to the PC and you do not wish to print to the default printer then click on "Setup Printer" first to select which of the available printers you would like to use. This brings up the standard Windows Print Setup dialog shown below.



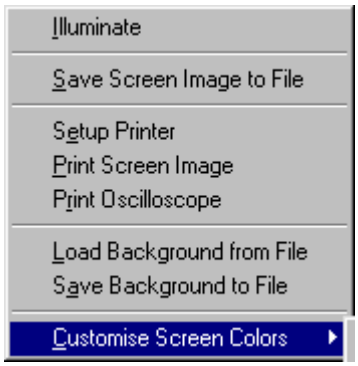
After changing the printer properties as desired, click on "OK" to select the new settings.

3.15 Customising the Display Colours

The display colours of the oscilloscope screen theme (Normal or Bright) can be changed from the default coluurs to suit the user preference. Once changed the theme colours are saved and will be restored on subsequent launces of the application. Changing the screen colours is done through the File Menu at the top of the application screen.



Click on "Screen" to view the drop down menu (below)



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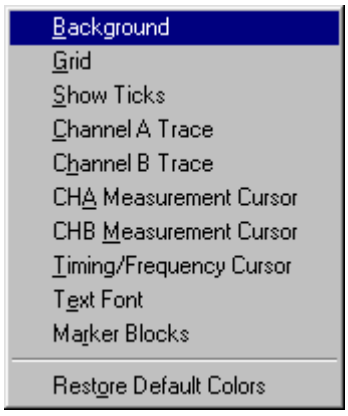
Placing the mouse cursor over the "Customise Screen Colours" entry will cuse a drop down sub-menu to appear as follows ..



Choose the screen item you would like to change from the sub-menu and click on it to bring up the colour selection dialog. Note : the colours can be reset to their default values at any time by clicking on the "Restore Default Colors" sub-menu item.

If you require more than basic colours shown, click on "Define Custom Colors" to choose from a wider selection. Once you have made your selection, click on the "OK" button to set the colour for the chosen item.

An example of an Oscilloscope Screen using alternative user-defined colours is shown below.

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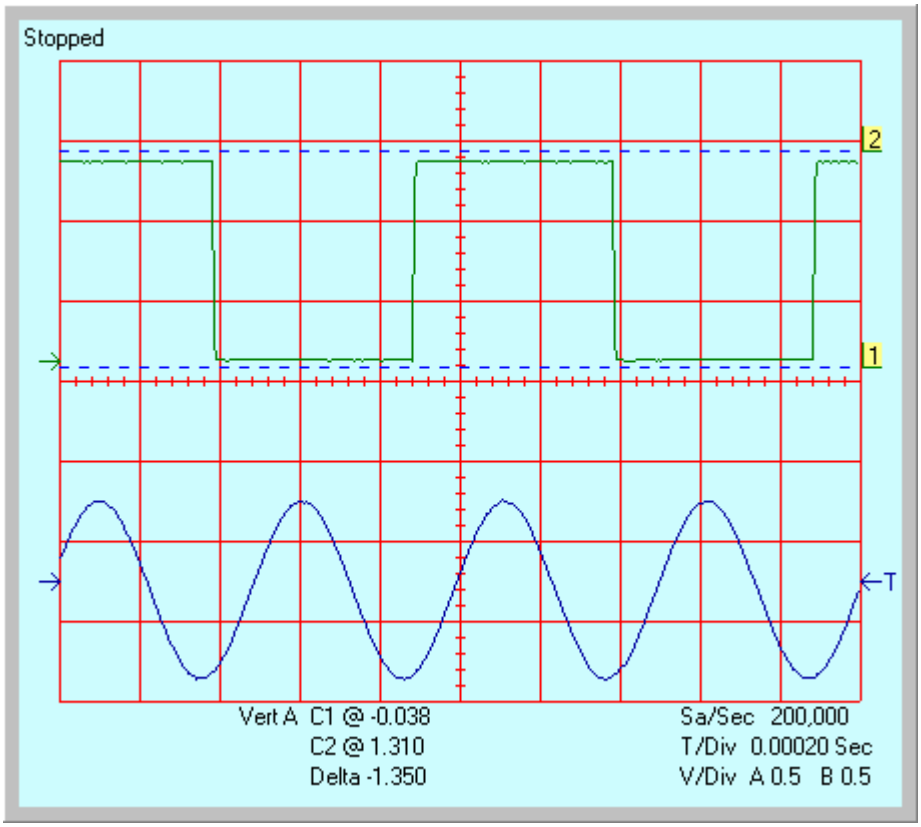
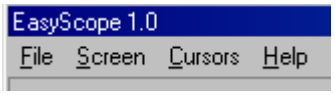
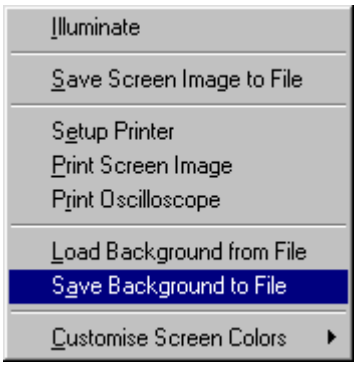


3.16 Customising the Background

The background image (background colour plus grid) of the oscilloscope screen can be saved to a Windows BMP format file, customised via a BMP editor such as Paint, Paintshop Pro etc with custom text, logos etc and re-loaded into the application. This is done through the File Menu at the top of the application screen.



Click on "Screen" to view the drop down menu (below)



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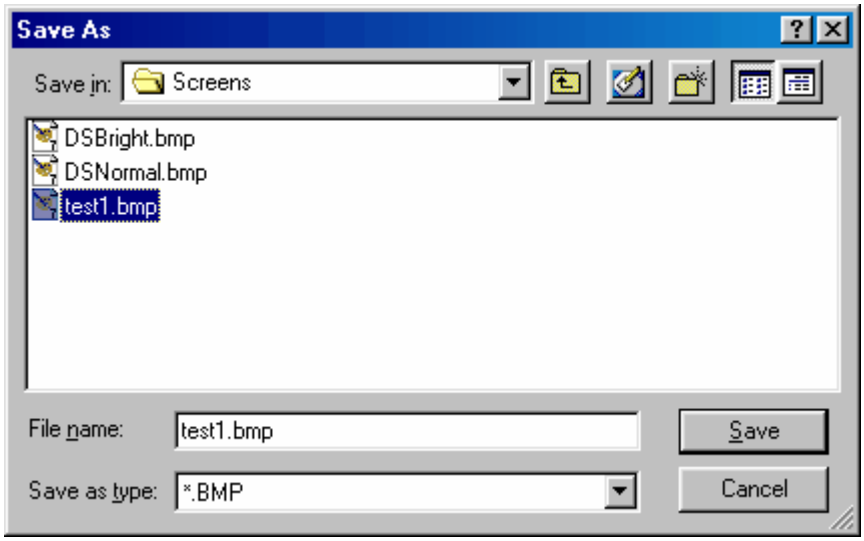
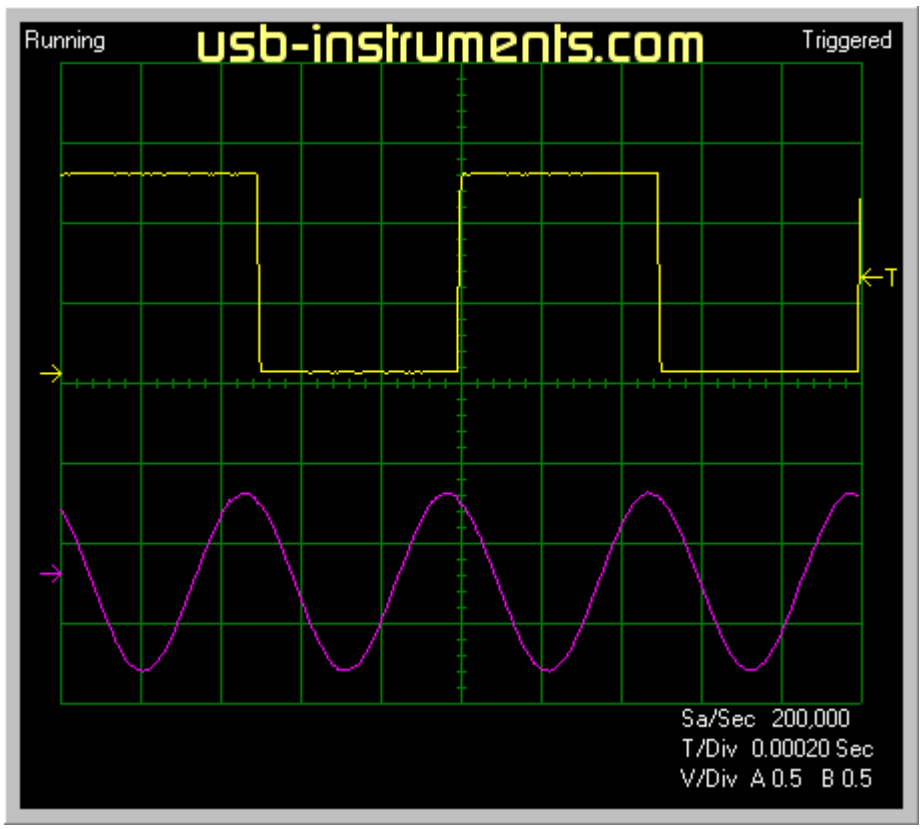
Click on "Save Background to File" to save the background. This brings up the Screen Save As Dialog box. The default folder for Screen background saves is the Screens folder in the application program main directory. Do NOT overwrite the two default theme screens DSNormal.bmp and DSBright.bmp as thse are re-created (over-written) everytime the application is launched.



In this case we will save the Normal screen background to file test1.bmp. We then edit test1.bmp, in this case to include a custom header, then reload it using the "Load Background from File" option. The modified Oscilloscope screen now looks like this -



Note : When editing the BMP file, do not alter the size of the image and do not change the file format

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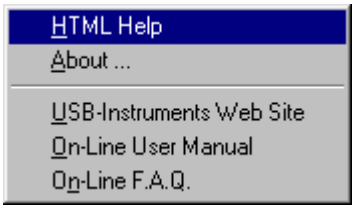
when saving the file. Doing so, can cause unpredictable results when running the application.

3.17 Help Menus

EasyScope provides built-in comprehensive access to both local and On-Line (accessed via the Internet) help.

Clicking on the "Help" item of the menu bar displays the following options ...



Clicking on the HTML Help option brings up the local help screen in Windows Compiled HTML (.CHM) format. If it has been some time since your application software was installed check on the USB Instruments Web Site to see if there is a newer version of the application software or help file available for download.

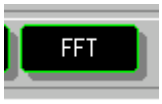
By clicking on "On-Line User Manual" you can view the latest version of the Help File on-line using your web browser. If you have any problems viewing the On-Line User Manual, check your browser settings to make sure that javascript is enabled.

By clicking on "On-Line F.A.Q." you can view the support Frequently Answered Questions on-line using your web browser. If you experience any problems, please check here first before contacting support. If you cannot find the answer to your query then Click Here ! to e-mail product support. If you have any problems viewing the On-Line F.A.Q., check your browser settings to make sure that javascript is enabled.

4 Using the FFT Display

4.1 FFT Display Overview

while a normal Sweep oscilloscope display can be used to display waveforms in terms of time, it is also possible to display the input waveforms in terms of frequency and magnitude by using a FFT (Fast Fourier transform) algorithm on the input data. To enable FFT display on EasyScope, click on the FFT button on the lower panel.



This will bring up a second application window containing the FFT display of the input waveforms.

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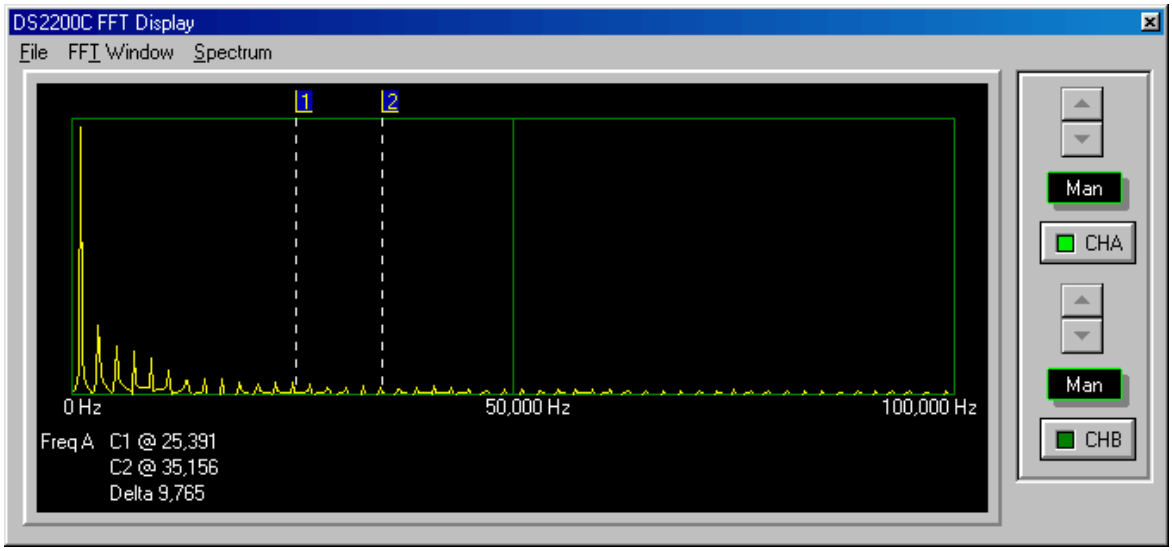

The FFT displays frequency on the X-Axis and relative magnitude on the Y-Axis. The results of the FFT are automatically scaled so that the frequency with the highest amplitude equals 100% of the Y Axis. It is possible to change this scaling manually by clicking on the "Man" button for that channel and using the Up/Down button to re-scale the Y-Axis manually.

The display can show either channel or both channels simultaneously by clicking on the CHA / CHB LED buttons to enable or disable the display of that channel.

For each channel, two cursors (dashed lines) are provided for measuring the Frequency and displaying it in an information box at the bottom of the display. To the top of the cursors are marker blocks 1 and 2. To move a cursor, place the mouse pointer over the marker block you wish to move, and holding down the left mouse button drag the cursor to the point you wish to measure.

The above FFT display shows a 1kHz square wave input on channel A. Being a square wave, the harmonics can clearly be seen. In this example it is difficult to measure the frequency accurately as the X-Axis stretches from zero to 100kHz.

The X-Axis scaling depends on the sampling frequency of the oscilloscope. In the above case, the Oscilloscope timebase was set to 200us / division which corresponds to a sample rate of 200,000 samples / sec. To zoom in on the 1KHz peak, we will adjust the timebase (on the main application screen) to 20ms / div which corresponds to a sampling rate of 10,000 samples / sec. The FFT display now looks like this -

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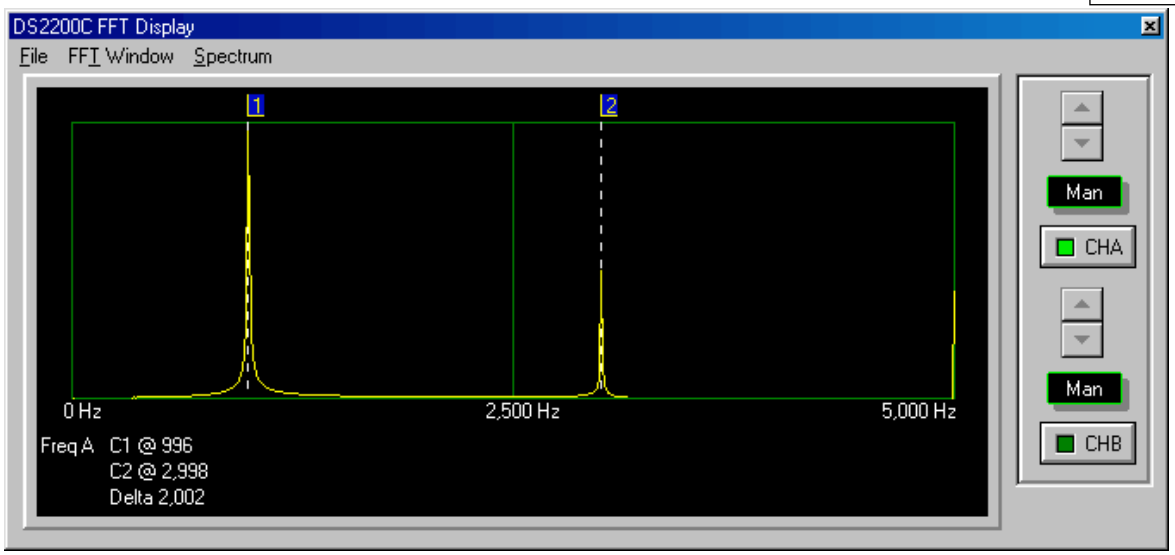
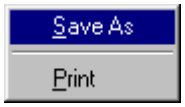


By moving the measurement cursors, we can see that the main frequency is shown as 996 Hz and the next harmonic is at 2998 Hz which, given the measurement resolution of the cursors is as close as we can get to the true values of 1,000 Hz and 3,000 Hz.

4.2 Saving the FFT

The image of the FFT screen can be saved to a Windows BMP format file. This is done through the File Menu at the top of the application's FFT screen.

Click on "File" to view the drop down menu (below)



Click on the "Save As" menu selection. This will bring up the "Save As" dialog box. By default, screen images are saved in the Images folder of the main application folder (the folder the EasyScope application was installed into). A different folder can be selected if desired. Either enter a new file name in the box provided or click on an existing file name if you want to overwrite it with the new image.

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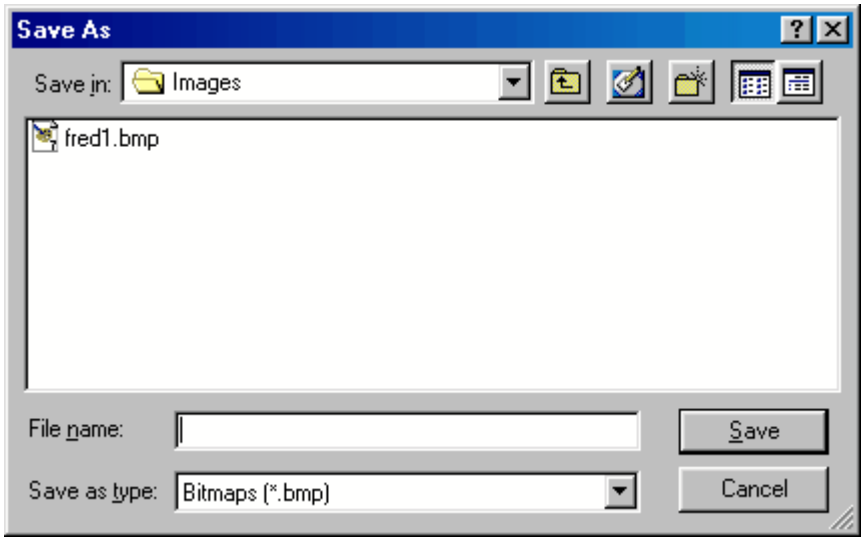
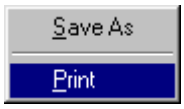


Click on "Save" to save the screen image to a file or "Cancel" to quit without saving and return to the application.

4.3 Printing the FFT

The image of the FFT screen can be printed to a Windows printer. This is done through the File Menu at the top of the application's FFT screen.

Click on "File" to view the drop down menu (below)



Click on the "Print" menu selection. This will spool the FFT image to the currently selected Windows printer.

4.4 Closing the FFT Display

To close the FFT Display window click on the small "x" at the top-right of the application's FFT Display Window.

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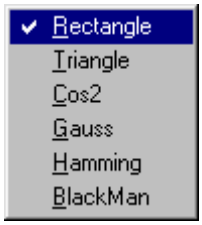
4.5 Other FFT Options

4.5.1 Changing the FFT Window

The FFT screen display can changed to use a number of different windowing algorithms.

Click on "FFT Window" to view the drop down menu (below)

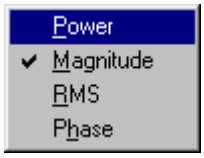


The default window algorithm is "Rectangle". Others can be selected from the drop down menu if required.

4.5.2 Changing the FFT Spectrum

The FFT screen display can changed to use a number of different ways of scaling the Y_axis. These can be changed from the memu at the top of the FFT display screen.

Click on "Spectrum" to view the drop down menu (below).



The default display algorithm is "Magnitude". Others can be selected from the drop down menu if required.

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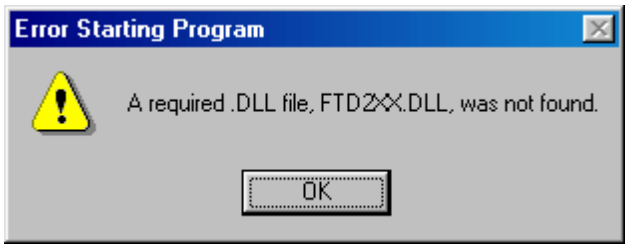
5 Appendix

5.1 Error Messages

5.1.1 FTD2XX DLL Not Found

If when trying to run the EasyScope Application for the first time you get an "Error Starting Program" message as shown below, the reason is that you have not yet installed the USB drivers. For information about installing the drivers read the Installing the USB Drivers 10 section then plug your hardware into a spare USB Port.

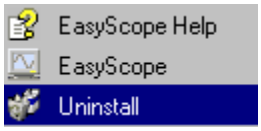


5.1.2 Device Not Found Error

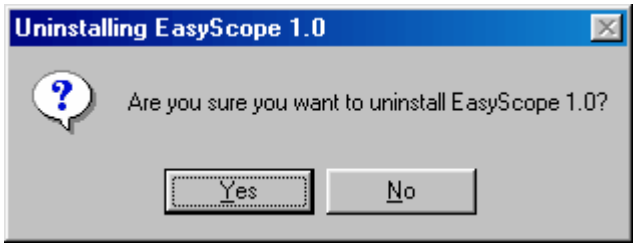
If the following message is displayed when the Run / Stop (or Single) button is clicked the probable cause is that the USB Oscilloscope hardware is not connected to the computer. Check the hardware connection to USB. If you are connected to a self-powered USB hub, make sure it is powered up.

5.2 Uninstalling The Software and Drivers

From the Start -> Programs -> EasyScope menu on the Windows Toolbal, select the Uninstall Option and click on it.

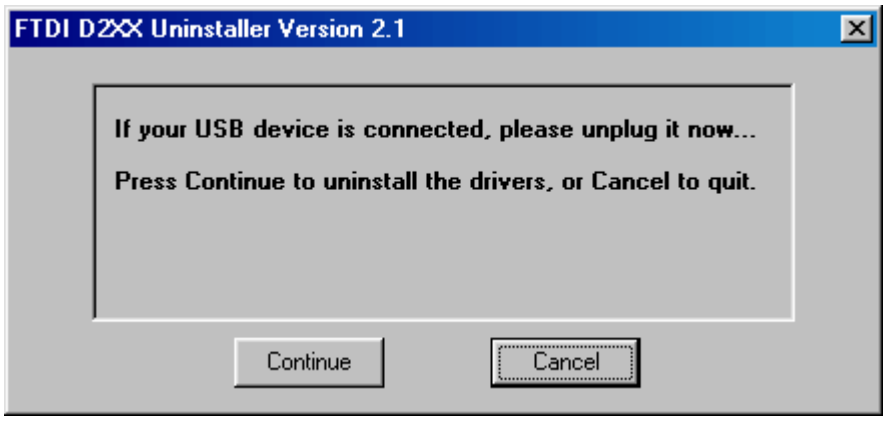


This will start the uninstaller program. The following confirmation screen will appear ...

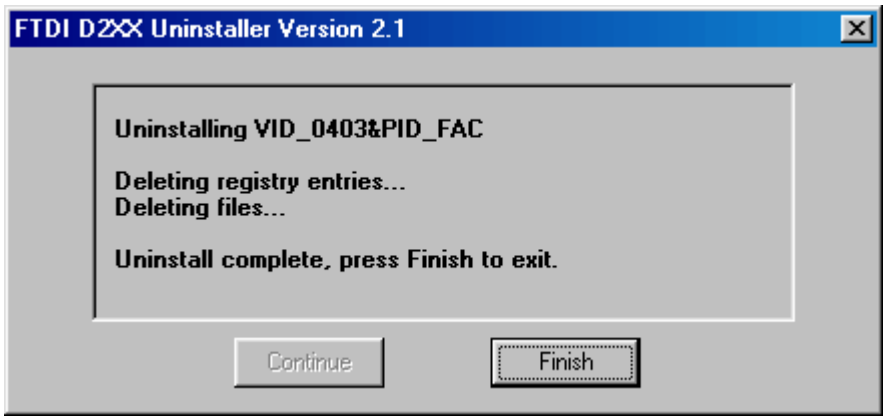


If you are sure you want to uninstall the EasyScope Program and USB drivers, click on "Yes". If not, click on "No" to abort the Uninstall process.

Clicking on "Yes" brings up the following confirmation screen for the Uninstallation of the USB drivers.


FTDI D2XX Uninstaller Version 2.1
If your USB device is connected, please unplug it now...
Press Continue to uninstall the drivers, or Cancel to quit.
Continue
Cancel

If your USB Oscilloscope is still connected, please unplug it now. Click on "Continue" to uninstall the USB Drivers.



After the USB drivers have been uninstalled you should see the above screen. Click on "Finish" to proceed to the uninstallation of the EasyScope Application software. This will bring up the following screen.

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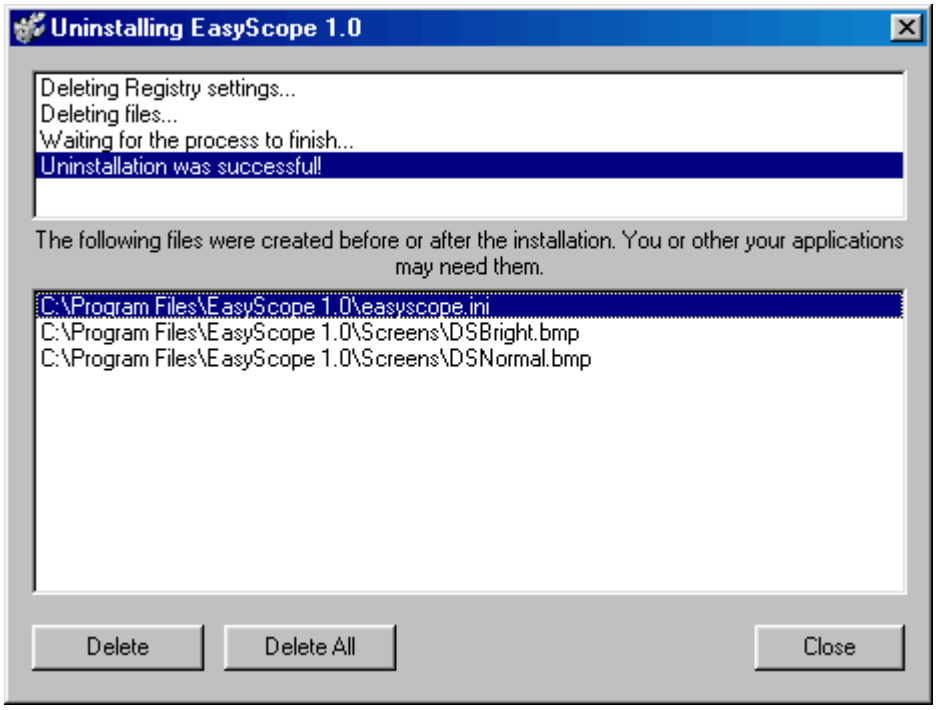
Uninstalling EasyScope 1.0
Deleting Registry settings...
Deleting files...
Waiting for the process to finish...
Uninstallation was successful!
The following files were created before or after the installation. You or other your applications may need them.
C:\Program Files\EasyScope 1.0\easyscope.ini
C:\Program Files\EasyScope 1.0\Screens\DSBright.bmp
C:\Program Files\EasyScope 1.0\Screens\DSNormal.bmp
Delete
Delete All
Close

When the EasyScope Software is run for the first time, it automatically creates an INI file (easyscope.ini) to store program settings and two BMP files (DSBright.bmp and DSNormal.bmp) containing the images of the Normal and Bright screen themes. It is safe to delete these. In the course of using EasyScope the user may have saved some screen images and should decide if they want to keep these or not. After deleting any unwanted files click on the "Close" button to finish the un-install procedure.

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